



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,620	09/16/2003	Syamal K. Ghosh	86897RLO	3531

7590 01/30/2006

Thomas H. Close
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
----------	--------------

1732

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,620	GHOSH ET AL.	
	Examiner	Art Unit	
	Jeff Wollschlager	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Slyke et al. (U.S. Patent 6,797,314; issued September 28, 2004; filed July 3,

2001) in view of Okuyama et al. (U.S. Patent 6,835,681; issued December 28, 2004; filed December 19, 2001).

With regard to claim 1, Van Slyke et al. teach a method for forming a homogeneous mixture of powders of organic material including at least one dopant component and one host component to provide a homogeneous mixture for forming a pellet for thermal physical vapor deposition producing an organic layer on a substrate for use in an organic light-emitting device comprising a) combining organic materials, such materials including at least one dopant component and one host component (col. 17 lines 36-43). Van Slyke et al. additionally teach g) combining the homogeneous mixture of organic powder to form a pellet suitable for thermal physical vaporization to produce an organic layer on a substrate for use in an organic light-emitting device (col. 18 lines 6-12). Van Slyke et al. teach a generic mixing method, but do not teach the mixing limitations set out in Claim 1 b) – f).

Okuyama et al. teach a method of mixing organic powders by b) providing a liquid to emulsify the organic materials, c) mixing the emulsified organic materials (col. 4. lines 19-25 and 30-33), d) heating the organic materials in a container until the liquid is evaporated and a solidified homogeneous mixture of organic materials remains (col. 4 lines 35-39), e) removing the solidified homogeneous mixture of organics from the container and f) pulverizing the solidified mixture of organic materials into a homogeneous mixture of organic powder (col. 4 lines 44-45).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the method of Van Slyke et al. to mix a

powder mixture of organic materials containing at least one host material and one dopant material prior to forming a pellet from the homogeneous mixture for thermal physical vapor deposition using the method of mixing powder taught by Okuyama et al. because Okuyama et al. teach using an emulsifier to produce a homogeneous mixture in a relatively uncomplicated manner (col. 4 lines 30-34). The motivation to do so is provided by Van Slyke et al. who teach the usefulness of a homogeneous mixture for physical thermal vapor deposition (col 4. lines 1-6). Thus, the claimed invention as a whole was *prima facie* obvious over the combined teachings of the prior art.

Claim 2 is directed toward the amount of dopant component in the mixture formed by the method of claim 1. The claimed range is 0.1 – 20% by weight. Van Slyke et al. teach that any range of dopant material may be selected (col. 17 lines 41-43). This is read to be from 0 – 100%.

Regarding claim 3, Van Slyke et al. teach forming a pellet by applying sufficient pressure to the mixture, but does not teach compacting the mixture in a range of pressures between 3,000 – 20,000 pounds per square inch. Okuyama et al. teach compacting the mixture in a preferable range of 50 – 200 MPa (approximately 7250 – 29,000 pounds per square inch). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F. 2d 1575 16 USPQ2d 1934 (Fed. Cir. 1990).

Regarding claim 6, Okuyama et al. teach mixing with a ball mill (col 4. lines 23-25).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Slyke et al. (U.S. Patent 6,797,314; issued September 28, 2004; filed July 3, 2001) in view of Okuyama et al. (U.S. Patent 6,835,681; issued December 28, 2004; filed December 19, 2001) and further in view of Saegusa (U.S. Patent 5,840,267; issued November 24, 1998).

Van Slyke et al. in view of Okuyama et al. teach the subject matter of claim 1; see the 103(a) rejection above. However, they do not teach the container is metal, glass, or a high temperature metal.

Saegusa however teaches mixing powder in a metal/platinum container (col 10, lines 39-41). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to take the method of Van Slyke et al. in view of Okuyama et al. and to modify it by using a metal/platinum container with a reasonable expectation of success. The motivation to do so is provided by Okuyama et al. in order to prevent the container from melting during heating. Thus, the claimed invention as a whole was *prima facie* obvious over the combined teachings of the prior art.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Slyke et al. (U.S. Patent 6,797,314; issued September 28, 2004; filed July 3, 2001) in view of Okuyama et al. (U.S. Patent 6,835,681; issued December 28, 2004; filed December 19, 2001) and further in view of Tsubota et al. (U.S. Patent 4,178,182; issued December 11, 1979).

Art Unit: 1732

Van Slyke et al. in view of Okuyama et al. teach the subject matter of claim 1; see the 103(a) rejection above. However, neither Van Slyke et al. nor Okuyama et al. teach using an ultrasonic horn to mix the material.

Tsubota et al. teach mixing a solution using an ultrasonic horn at 29 kHz (col. 25 lines 13-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to take the method of Van Slyke et al. in view of Okuyama et al. and to modify it by using an ultrasonic horn operating at 29 kHz with a reasonable expectation of success. The motivation to do so is provided by Tsubota et al. who teach that an emulsion is formed by using the ultrasonic horn. The ultrasonic mixing provides a uniform dispersion which could be used to form the homogeneous mixture of Van Slyke et al.

Conclusion

No claim is allowed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 6,649,436: Ghosh et al. teach using organic materials in making an organic light emitting device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Friday 7:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JW

Jeff Wollschlager
Examiner
Art Unit 1732

January 10, 2006


MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER